MIL-STD-2045-14502-4
July 1994

MILITARY STANDARD

INFORMATION TECHNOLOGY
DOD STANDARDIZED TRANSPORT PROFILE
INTERNET TRANSPORT PROFILE
FOR DOD COMMUNICATIONS

Part 4: Local Area Network (LAN)
Media Independent Requirements

AMSC N/A   AREA DCPS

Foreword

This military standard is approved for use by all Departments and Agencies of the Department of Defense (DOD).

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be of use in improving this MIL-STD should be addressed to the:

> Joint Interoperability and Engineering Organization (JIEO)
> ATTN: TBBD
> Fort Monmouth, New Jersey 07703-5613

by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this MIL-STD or by memorandum.

This DoD Standardized Profile (DSP) is a functional DoD Data Communications Protocol Standard (DCPS) produced by the DCPS Technical Management Panel (DTMP). The MIL-STD-2045 document series was established within the DCPS Standardization Area to allow for the enhancement of commercial standards or the development of standards that are unique to DoD.

The MIL-STD-2045-10000 series, MIL-STD-2045-10000 to MIL-STD-2045-19999 inclusive, will be used to describe how DoD will implement commercial, international, national, federal, or military standards within the functional profile concept to provide required network services. The Government Open Systems Interconnection Profile (GOSIP) will serve as the base for developing the 10000 series with DoD enhancements, unique military standards, and interim standards being used only when necessary.

The MIL-STD-2045-20000 series, MIL-STD-2045-20000 to MIL-STD-2045-29999 inclusive, will be used to describe DoD enhancements and extensions to existing commercial, international, national, or federal standards.

The MIL-STD-2045-30000 series, MIL-STD-2045-30000 to MIL-STD-2045-39999 inclusive, will be used to describe protocols and services unique to DoD that will not be supported by commercial, international, national, or federal standards.

The MIL-STD-2045-40000 series, MIL-STD-2045-40000 to MIL-STD-2045-49999 inclusive, will be used to document interim standards. Interim standards document protocols and services needed by DoD until these protocols and services are described in either GOSIP or in a MIL-STD-2045-20000 or -30000 series standard.

The MIL-STD-2045-50000 series, MIL-STD-2045-50000 to MIL-STD-2045-59999 inclusive, will be used to describe how DOD will implement commercial, international, national, federal, or military standards within the functional profile concept to provide required network services. The Government Open Systems Interconnection Profiles (GOSIP) will serve as the base for developing the 50000 series with DOD enhancements, unique military standards, and interim standards being used only when necessary. The difference between MIL-STD-2045-10000 series and the MIL-STD-2045-50000 series is that the 50000 series are interim profiles

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Specific details and instructions for establishing a MIL-STD-2045 document, as well as profile development guidelines, are documented in MIL-HDBK-829, Volumes 1 and 2. DTMP Working Groups shall be responsible for DSP development and informal Service or Agency coordination; the DTMP Plenary shall be responsible for final review and approval.

This document is part of a set of interim DoD data communications protocol profiles based on the Internet protocol suite and is intended to support the interoperability of DoD communication networks, including connectivity with the Defense Data Network (DDN).

This part of MIL-STD 2045-14502 contains one normative annex and one informative annex:

Annex A (normative) DSPICS REQUIREMENTS LIST (DPRL).
Annex B (informative) CONCLUDING MATERIAL.

Contents

Annexes

Draft MIL-STD 2045-14502-4: July 94

Figures

Tables

Introduction

This MIL-STD is part of a set of interim Command and Control (C^2) common data communication profiles. It will cease to exist upon the transition of the various military service and agency (S/A) networks to GOSIP. The purpose is to record what presently exists in, and what is needed to achieve the interoperability of the various S/A data communication networks deployed to support a Joint Task Force (JTF).

This DSP is defined within the context of functional standardization, in accordance with the principles specified by MIL-HDBK-829, volume 2, "Guidelines For Data Communications Protocol Standards (DCPS) DoD Standardized Profiles (DSPs)." The context of functional standardization is one part of the overall field of Information Technology (IT) standardization activities covering base standards, profiles and registration mechanisms. A profile defines a combination of base standards that collectively perform a specific well-defined Information Technology function. Profiles standardize the selection of options and other variations in the base standards to promote system interoperability.

The base standards of this DSP include: Request For Comments (RFCs) designated as Official Internet Architecture Board (IAB) standards, other RFCs, and Open Systems Interconnection (OSI) Layer Standards from the Open Systems Interconnection (OSI) Reference Model.

This document is intended to be part of a complete TCP/IP based transport profile. It specifies an internet connection-mode transport service over an internet connectionless mode network service operating over several types of subnetworks. This transport profile is a multipart profile, of which this is Part 4. Part 4 specifies media-independent requirements for IEEE 802 Local Area Networks (LANs) and requirements for address resolution using the Address Resolution Protocol (ARP) and Reverse Address Resolution Protocol (RARP).

Information Technology - DoD Standardized Profile (DSP) - Internet Transport Profiles - Part 4: Local Area Network (LAN) Media Independent Requirements

1   Scope

1.1   General

This standardized profile applies to end systems concerned with implementing the TCP/IP protocol suite. It specifies a combination of protocols that provide a connectionless or a connection-oriented transport service over a connectionless network service. The subnetwork technology is not contained in this part.

1.2   Position Within the Taxonomy

This profile contains requirements for both connection-oriented and a connectionless transport service. It also contains requirements for a connectionless network service.

1.3   Scenario

This profile specifies the provision for connectionless or connection-oriented transport service between an end system connected to a subnetwork and another compatible end system through the IP connectionless network service. The compatible end system may use mutually agreed upon access methods contained within this DSP, or may conform to a mutually agreed upon alternative access methods. An end system is compatible only if the suboptions (e.g., TCP) are compatible. This profile contains the LAN Media independent requirements for IEEE 802 LANs.The layer standards which make up this profile are shown in figure 1.

Transport layer	IAB STD 7 (TCP) IAB STD 6 (UDP)	TCP/IP Profile MIL-STD 2045-14502, Part 1
Network layer	IAB STD 5 (IP)	
	RFC 826 (ARP) RFC 1042 (IP over IEEE 802) RFC 903 (RARP)	Media Independent Requirements MIL-STD 2045- 14502, part 4
Data link layer	**LLC (ISO 8802-2)**	
	MAC (ISO 8802-3)	Media-Dependent Requirements for CSMA/CD LANs MIL-STD 2045-14502, Part 5
Physical layer	PLS, AUI, MAU (ISO 8802-3)	

Figure 1. Transport Profile Scenario

1

2   References

2.1   Government Documents

2.1.1   Specifications, standards, and handbooks.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

MIL-HDBK 829:	July 1994	*Guidelines for DOD Standardized Profiles.*
MIL-STD-2045-14502-1,	July 1994	*Transport and Internet Services*
MIL-STD-2045-14502-2,	July 1994	*Point-to-Point Links*
MIL-STD-2045-14502-3,	July 1994	*Wide Area Network Access*
MIL-STD-2045 14502-5	July 1994	*Local Area Network (LAN) Media Dependent Requirements*
MIL-STD-2045-14502-6,	July 1994	*Combat Net Radio (CNR*

DOD activities may obtain copies of DOD directives through their own publication channels or from the DOD Single Stock Point, Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Other federal agencies and the public may purchase copies from the U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

Copies of Federal Information Processing Standards (FIPS) are available to Department of Defense activities from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099. Others must request copies of FIPS from the National Technical Information Services, 5285 Port Royal, Springfield, VA 22161-2171.

2.1.2   Other Government documents, drawings and publications.

NONE

2.2   Non-Government publications.

2.2.1   Profiles

NONE

2.2.2   Base Standards

(a)	ISO 8802-2:1989-12	*Information processing systems - Local area networks - Part 2: Logical link control.*
(b)	ISO 8802-2:1989/ PDAM3.2:1991-10	*Information processing systems - Local area networks - Part 2: Logical link control - Amendment 3: PICS proforma.*
(c)	IAB STD 3	*(RFC 1122: 1989, Host Requirements - Communications, RFC 1123: 1989, Host Requirements - Applications)*
(d)	RFC 826: 1982	*An Ethernet Address Resolution Protocol (ARP)*
(e)	RFC 903: 1984	*A Reverse Address Resolution Protocol (RARP)*
(f)	RFC 1042: 1988	*IP and ARP over IEEE 802 Networks*

2.2.3   Other Non Government documents, drawings, and publications

None

2.3   Order of precedence

In the event of a conflict between the test of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3   Definitions

Internet Advisory Board (IAB) Standards (STD) : The IAB has established this as an official standard protocol for the Internet. These protocols are assigned STD numbers and are based on one or more RFCs.

Request For Comments (RFC) : RFCs are the working notes of the "Network Working Group," that is the Internet research and development community.

Note: All standards are published RFCs, but not all RFCs specify standards.

4   Abbreviations and Acronyms

ARP   Address Resolution Protocol
RARP   Reverse Address Resolution Protocol
DoD   Department Of Defense
DSP   DoD Standardized Profile
GOSIP   Government Open Systems Interconnection Profile
IAB   Internet Architecture Board
IP   Internet Protocol
RFC   Request For Comments
STD   Standard

5   Requirements

5.1   General

A conforming implementation of MIL-STD 2045-14502 shall be unconditionally compliant and therefore shall satisfy all the "must" and all the "should" requirements of the reference base standards and shall not implement any capability that has been identified by the base standards as "should not". The following requirements shall be implemented.

(a) All requirements in the remainder of this clause 5.
(b) All mandatory requirements of the base standards referenced by this DSP.
(c) All the constraints specified in Annex A (normative), DPRL.

5.2   Network Layer Requirements

A conforming implementation of this profile shall satisfy the media-dependent network layer conformance requirements. This section covers the subnetwork-dependent convergence functions for ISO 8802 LANs.   These functions include mapping IP addresses onto the 802-2 subnetwork address space and encapsulation.

ARP and RARP are considered to be part of the Link Layer in Internet documentation, but for this profile, they are considered to be part of the subnetwork-dependent convergence function within the Network layer of the OSI Reference Model.

5.2.1   Static Conformance Requirements

5.2.1.1   The mapping of 32-bit Internet addresses to 16-bit or 48-bit IEEE 802 addresses must be done via the dynamic discovery procedure found in ARP.

5.2.1.2   The broadcast Internet address (host part is all binary ones) should (must) be mapped to the broadcast IEEE 802 address (all binary ones).

5.2.1.3   All hosts shall be able to communicate using the standard (non-trailer) encapsulation method described in RFC 1042.

5.2.1.4   The IP datagram shall be transmitted over IEEE 802 networks as a series of 8-bit bytes (octets) in "big-endian" transmission order.

5.2.1.5   The Maximum Transmission Unit (MTU) on any given network shall be common to all hosts on that network. The MTU for 802.3 networks is 1518 octets allowing 1492 octets for the IP datagram.

5.2.1.6   The packet format for RARP shall be the same format used in ARP.

5.2.1.7   RARP shall use opcodes 3 for "request reverse" and 4 for "reply reverse." Packets using other opcodes are undefined.

5.2.2   Dynamic Conformance Requirements

There are no additional dynamic conformance requirements.

5.3   Link Layer Requirements

A conforming implementation of this profile shall satisfy the subnetwork-dependent network layer conformance requirements for operation over the LLC protocol of ISO 8802-2.

5.3.1   Static Conformance Requirements

5.3.1.1   Class I

The data link sublayer shall use ISO 8802-2 LLC Class I connectionless unacknowledged service.

5.3.1.2   XID, TEST, and UI

The XID, the TEST, and UI commands and responses shall be supported for transmission.

5.3.1.3   PDU Information Field

The capability to transmit PDU with an information field shall be supported.

5.3.1.4   DSAP Addresses for UI_CMD

The DSAP addresses shall be implemented according to ISO 8802-2, section 5.4.1.1.1 and RFC 1042, page 3.

5.3.1.5   SSAP Addresses for UI_CMD

The SSAP addresses of the UI PDU may be individual or it may be null.

5.3.1.6   Receipt of UI_CMD with P=1

Upon receipt of a UI_CMD with P=1, the frame shall be discarded.

5.3.1.7   DSAP Addresses in CMD PDU for XID CMD

The DSAP addresses shall be implemented according to ISO 8802-2, section 5.4.1.1.2 and RFC 1042, page 3.

5.3.1.8 SSAP Addresses in CMD PDU for XID CMD

When XID CMD is supported, the individual SSAP address in CMD PDU shall also be supported. The null SSAP address may be supported.

5.3.1.9 CMD PDU Duplicate Address

The capability to perform duplicate address checking shall be supported.

5.3.1.10 Command PDU Fields

When the TEST PDU is supported, the information field in the command PDU shall be supported.

5.3.1.11 Response PDU Fields

The Information field in a response PDU shall be supported.

5.3.1.12 DSAP Addresses in CMD PDU for TEST PDU

The DSAP addresses shall be supported according to ISO 8802-2, section 5.4.1.1.3 and RFC 1042, page 3.

5.3.1.13 SSAP Addresses in CMD PDU for TEST PDU

When TEST PDU is supported, the individual SSAP address in CMD PDU shall also be supported. The null SSAP address may be supported.

5.3.1.14 RSP PDU Information Field

The RSP PDU information field shall be identical to the CMD PDUs information field.

5.3.2 Dynamic Conformance Requirements

5.3.2.1 XID_CMD and TEST_CMD

The XID_CMD and/or TEST_CMD may be transmitted.

5.3.2.2 UI_PDU

All transmitted UI_CMD shall contain an information field. The DSAP addresses shall be used according to ISO 8802-2, section 5.4.1.1.1 and RFC 1042, page 3.

Upon receipt of a UI_CMD with P=1, that frame shall always be discarded.

5.3.2.3   XID_PDU

The DSAP addresses shall be used according to ISO 8802-2, section 5.4.1.1.2 and RFC 1042, page 3.

The SSAP addresses of the XID PDU may be individual or it may be null.

5.3.2.4   TEST PDU

The information field of the command or the response TEST PDU may be transmitted. The DSAP addresses shall be used according to ISO 8802-2, section 5.4.1.1.3 and RFC 1042, page 3.

The SSAP addresses of the TEST PDU may be individual or it may be null.

ANNEX A (normative)

DSPICS REQUIREMENTS LIST (DPRL)

A.1   Introduction

This document provides the DSPICS Requirements List (DPRL) for implementations of the DoD Standardized Profile (DSP) 2045-14502, Part 4. The DSPICS for an implementation is generated by completing the DPRL in accordance with the instructions given below.

An implementation shall satisfy the mandatory conformance requirements of the base standards referenced in this profile.

A completed DPRL is called the DSPICS for the implementation in question. The DSPICS is a statement of which capabilities and options of the protocol have been implemented. The following can use the DSPICS:

> (a) the protocol implementor, as a check-list to reduce the risk of failure to conform to the standard through oversight.

> (b) the supplier and acquires - or potential acquires - of the implementation, as a detailed indication of the capabilities of the implementation, stated relative to the common basis for understanding provided by the standard DSPICS proforma.

> (c) the user - or potential user - of the implementation, as a basis for initially checking the possibility of interworking with another implementation (note that, while interworking can never be guaranteed, failure to internetwork can often be predicted from incompatible DSPICSs).

> (d) a protocol tester, as the basis for selecting appropriate tests against which to assess the claim for conformance of the implementation.

A.1.1   Notation

The following notations and symbols from MIL-HDBK 829, which references ISO/IEC TR 10000-1 and -2, are used in the DPRL to indicate the status of features:

Status Symbols

m	- mandatory.
m.<n>	- support of every item of the group labeled by the same numeral <n> required, but only one is active at a time.
o	- optional.
o.<n>	- optional, but support of at least one of the group of options labeled by the same numeral <n> is required.
c	- conditional.
-	- non-applicable (i.e. logically impossible in the scope of the profile).
x	- excluded or prohibited.
i	- out of scope of profile (left as an implementation choice).

In addition, the symbol "€" is used to indicate an option whose status is not constrained by the profile (status in the base standard). The o.<n> notation is used to show a set of selectable options (i.e., one or more of the set must be implemented) with the same identifier <n>.

Two character combinations may be used for dynamic conformance requirements. In this case, the first character refers to the static (implementation) status, and the second refers to the dynamic (use); thus `mo' means "mandatory to be implemented, optional to be used."

Notations for Conditional Status

The following predicate notation is used:

<predicate>::   This notation introduces a group of items, all of which are conditional on <predicate>.

<predicate>:   This notation introduces a single item which is conditional on <predicate>.

In each case, the predicate may identify a profile feature, or a boolean combination of predicates. ("^" is the symbol for logical negation).

<index>:   This predicate symbol means that the status following it applies only when the DPICS states that the features identified by the index is supported. In the simplest case, <index> is the identifying tag of a single DPICS items. <index> also may be a Boolean expression composed of several indices.

<index>::   When this group predicate is true, the associated clause should be completed.

Notations used in the Protocol Feature Column

<r>   Symbol used to denote the receiving system.
<t>   Symbol used to denote the transmitting system.

Support Column Symbols

The support of every item as claimed by the implementor is stated by circling the appropriate answer (either Yes, No or N/A) in the support column:

Yes   Supported by the implementation.
No   Not supported by the implementation.
N/A   Not applicable.

Base standard requirements are shown using the equivalent notations in upper case (e.g., M, O, X).

A.1.2   Footnotes

Footnotes to the proforma are indicated by superscript numerals. The footnote appears on the page of the first occurrence of the numeral. Subsequent occurrences of a numeral refer to the footnote of the first occurrence.

A.1.3   Instructions for Completing the DPRL

A DSP implementor shows the extent of compliance to a DSP by completing the DPRL; that is, compliance to all mandatory requirements and the options that are and are not supported are shown. The resulting completed DPRL is called a DSPICS. Where this profile refines the features of the base standards, the requirements expressed in this DPRL shall be applied (as indicated in DPRL items with no "Profile Support" column) to constrain the allowable responses in the base standard DPICS proforma. When this profile makes additional requirements, the "Profile Support" column for such DPRLs shall be completed. In this column, each response either shall be selected from the indicated set of responses, or comprise one or more parameter values as requested. For an inapplicable conditional requirement, a Not Applicable (NA) check-box is provided. If a mandatory requirement is not satisfied, exception information must be supplied by entering a reference Xi, where i is a unique identifier, to an accompanying rationale for the noncompliance. When the profile requirement is expressed as a two-character combination (as defined in A.1.1 above), then the response shall address each element of the requirement; e.g., for the requirement "mo," the possible compliant responses are "yy" or "yn."

A.2 Standards Referenced

This XA profile specifies the provision of TCP service in an End System from which a standardized IP network service operating over point-to-point circuits is available (or can be made available). It uses the following standards:

IAB STD 3 (RFC 1122)	Host Requirements - Communications
RFC 826	Address Resolution Protocol (ARP)
RFC 903	Reverse Address Resolution Protocol (RARP)
RFC 1042	IP over IEEE 802.2 Networks
ISO 8802-2	Link Layer Control (LLC)

A.3 DSPICS Requirements List

A.3.1 General Information

A.3.1.1 Identification of PICS

Ref	Question	Response
1	Date of Statement (DC/MM/YY)	
2	PICS serial number	
3	System Conformance statement cross-reference	

A.3.1.2 Identification of IUT

Ref	Question	Response
1	Implementation name	
2	Implementation version	
3	Machine name	
4	Machine version	
5	Operating System name	
6	Operating System version	
7	Special Configuration	
8	Other Information	

A.3.1.3 Global Statement of Conformance

Ref	Question	Response
1	Are all mandatory IAB STD requirements met for:	
2	RFC 826, 1042 (ARP)?	
3	RFC 903 (RARP)?	
4	ISO 8802-2 (LLC TYPE I)?	

A.3.1.4 Protocols

The following table lists the detailed requirements for the implementation of this profile.

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
ARP	Address Resolution Protocol for Ethernet and 802.3 networks	RFC 826, RFC 1042		2.1	m	Yes
RARP	A Reverse Address Resolution Protocol	RFC 903			m	Yes
LLC	Logical Link Control (class 1)	ISO 8802-2			m	Yes
IPE	IP Encapsulation for 802.3 networks (using LLC)	RFC 1042			m	Yes

A.3.2 Network Layer

A.3.2.1 ARP Major Capabilities

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
FLSH	Flush Out-of-date ARP Cache Entries	RFC 1122: 2.3.2.1	M		m	Yes
FLD	Prevent ARP Floods	RFC 1122: 2.3.2.1	M		m	Yes
TOUT	Cache Timeout Configurable	RFC 1122: 2.3.2.1	MO		mo	Yes No
SAVE	Save At Least One (Latest) Unresolved Packet	RFC 1122: 2.3.2.2	MO		mo	Yes No

A.3.2.2 IEEE 802 Encapsulation

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
TRE	Trailer Encapsulation	RFC 1122: 2.3.1	O		o	Yes No
NEG	Send Trailers Without Negotiation	RFC 1122: 2.3.1	X		x	No
	Host Able To:					
R2	Receive RFC-1042 Encapsulation	RFC 1122: 2.3.3	M	5.2.1.3	m	Yes
S2	Send RFC-1042 Encapsulation	RFC 1122: 2.3.3	M	5.2.1.3	m	Yes
SK1	Send K1=6 Encapsulation	RFC 1122: 2.3.3	X		x	No
NET	Use ARP On IEEE 802 Nets	RFC 1122: 2.3.3	M		m	Yes
RBCT	Link Layer Report Broadcasts to IP Layer	RFC 1122: 2.4	M		m	Yes

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
TOS	IP Layer Pass TOS To Link Layer	RFC 1122: 2.4	M		m	Yes
UNR	No ARP Cache Entry Treated As Destination Unreachable	RFC 1122: 2.4	X		x	No
BRA	Broadcast Address Map From IP To 802.2	RFC 1042: p.4	M	5.2.1.2	m	Yes
OCT	IP Datagrams Sent As Octets In Big-endian Bit Order	RFC 1042: p.4	M	5.2.1.4	m	Yes
MTU	Maximum Transmission Unit for IP Datagrams Over 802.3 Networks Is 1492 Octets	RFC 1042: p.7	M	5.2.1.5	m	Yes

A.3.2.3 Reverse Address Resolution Protocol (RARP)

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
RFMT	Packet Format For RARP	RFC 903: p.2	M	5.2.1.6	m	Yes
OPCD	Valid RARP Opcodes	RFC 903: p.3	M	5.2.1.7	m	Yes

A.3.3 Data Link Layer (LLC Sub-layer)[1]

A.3.3.1 Classes Supported

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
Cls/18	Class I support	IS: 4	M	5.3.1.1	m	Yes
Cls/19	Class II support	IS: 4	O		i[2]	Yes

A.3.3.2 General Characteristics

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
XID	XID PDU supported on transmission	IS: 6.6	O	5.3.1.2	mo	Yes No

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[1]References to IS in this section (A.3.3) are to ISO 8802-2:1989.

[2]ISO 8802-2 provides two classes of service. Class I is unacknowledged connectionless mode service only. Class II is both connectionless Class I service and connection-mode service.

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
TEST	TEST PDU supported on transmission	IS:6.7	O	5.3.1.2	mo	Yes No
UI	UI PDU supported on transmission			5.3.1.2	mo	Yes No

A.3.3.3 Formats and Procedures (UI PDU)

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
F/11d	Transmit PDU with information field	IS: 3.3.3	O	5.3.1.3	mm	Yes
	DSAP addresses supported	IS: 5.4.1.1.1		5.3.1.4		
DSAP/ 12a	- individual		O.1		mo.1	Yes No
DSAP/ 12b	- group		O.1		mo.1	Yes No
DSAP/ 12c	- global		O.1		mo.1	Yes No
DSAP/ 12d	- null		O.1		mo.1	Yes No
	Action on receipt of UI_CMD with P=1	IS: 6.3		5.3.1.6		
UIP/ 17a	Discard frame		O.2		mm	Yes
UIP/ 17b	Pass frame to LLC user with flag that indicates P bit was set to 1		O.2		x	No

A.3.3.4 Formats and Procedures (XID PDU)

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
	Procedures as initiator	IS: 6.6, 5.4.1.1.2				
XIDI/ 22a	- <s> CMD PDU with P=0		O.70[3]		o.70	Yes No
XIDI/ 22b	- <s> CMD PDU with P=1		O.70[3]		o.70	Yes No
	DSAP addresses in CMD PDU	IS: 5.4.1.1.2		5.3.1.7		

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[3]The ISO 8802-2 PICS proforma lists a status of "O" for each of these items. Clause 5.2.3 of the base standard states that "The U-format PDUs ... shall include a P/F bit that shall be set to 1 or 0." Clause 5.4.1 states that "The Type 1 commands and responses are all U-format PDUs." XID and TEST command PDUs must therefore set the P bit to 1 or 0. The PICS proforma status should have linked these choices. This was done here.

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
XDSA P/23a	- null		XID/3: O.3[4]		XID/3: mo.3	Yes No
XDSA P/23b	- individual		XID/3:O.3		XID/3: mo.3	Yes No
XDSA P/23c	- group		XID/3:O.3		XID/3: mo.3	Yes No
XDSA P/23d	-global		XID/3:O.3		XID/3: mo.3	Yes No
	SSAP addresses in CMD PDU			5.3.1.8		
XSSA P/24a	- individual	IS: 5.4.1.1.2	XID/3:M		XID/3: mo	Yes No
XSSA P/24b	- null	IS: 6.6(1)	XID/3:O		XID/3: oo	Yes No
XIF/25	CMD PDU Information field format	IS: 5.4.1.1.2	XID/3:M		XID/3: mo	Yes No
XDAC /26	CMD PDU duplicate address checking	IS: 6.9.2	O	5.3.1.9	mo	Yes No

A.3.3.5   Formats and Procedures (TEST PDU)

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
	Command PDU Fields			5.3.1.10		
TSTC/ 31d	Information	IS: 5.4.1.1.3	TEST/7:O		TEST/ 7:mo	Yes No
	Response PDU fields			5.3.1.11		
TSTR/ 32d	Information	IS: 5.4.1.2.2	O[5]		mo	Yes No
	Procedures as initiator	IS: 6.7, 5.4.1.1.3				
TSTI/ 33a	- <s> CMD PDU with P=0		O.71[3]		o.71	Yes No
TSTI/ 33b	- <s> CMD PDU with P=1		O.71[3]		o.71	Yes No
	DSAP addresses in CMD PDU	IS: 5.4.1.1.3		5.3.1.12		
TDSA P/34a	- null		TEST/7: O.4		TEST/ 7:mo.4	Yes No

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[4]Clause 6.9.2 states that the null DSAP address shall be used in an XID command PDU when duplicate address checking is performed. This item should therefore be mandatory with a predicate of XDAC/26 (i.e., XDAC/26:M). The PICS proforma does not show this.

[5]As stated in clause 5.4.1.1.3, the response PDU is only required to contain the command PDU information field if it is present. This item should therefore have a linkage to item TSTC/31d (i.e. TSTC/31d:M).

Item	Protocol Feature	Base Standard		Profile		Support
		Reference	Status	Clause	Status	
TDSA P/34b	- individual		TEST/7: O.4		TEST/ 7:mo.4	Yes No
TDSA P/34c	- group		TEST/7: O.4		TEST/ 7:mo.4	Yes No
TDSA P/34d	- global		TEST/7: O.4		TEST/ 7:mo.4	Yes No
	SSAP addresses in CMD PDU			5.3.1.13		
TSSA P/35a	- individual		TEST/7: O.5		TEST/ 7:mo	Yes No
TSSA P/35b	- null		TEST/7: O.5		TEST/ 7:mo	Yes No
TSTIF /39	RSP PDU information field identical to CMD PDU's	IS: 6.7, 5.4.1.2.2	O[6]	5.3.1.14	mo	Yes No

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[6]It is not a precise statement of the base standard requirement to list this item as optional. The base standard requires the TEST response PDU to contain the information field of the received TEST command PDU if it can. Options exist only when the receiving LLC cannot perform this action that (e.g. it cannot receive the entire information field). See clause 6.7 for details.

ANNEX B (informative)

CONCLUDING MATERIAL

B.1 Deviations from the Base Standards/Referenced Profiles

This MIL-STD documents the data contained in the IAB standards 3, 5, 6, and 7 in the ISO/IEC TR 10000, "Framework and Taxonomy of International Standardized Profiles" and MIL-HDBK-829 format. This DSP does not deviate from the protocol as written in the RFC base standards.

The classification of the requirements in RFCs have been changed in the DSPICS to the following:

RFC	MIL-STD
MUST	Mandatory
SHOULD	Mandatory
MAY	Optional
SHOULD NOT	Prohibited
MUST NOT	Prohibited

B.2 Subject Term (Keyword) Listing

ARP
Address Resolution Protocol
Data link
Internet Activities Board
Internet Protocol
Internet Message Control Protocol
IAB STD 3
ICMP
LLC
Logical Link Control
Network
RFC 1123
TCP
Transmission Control protocol
UDP
User Datagram Protocol

B.3 Preparing Activity:

Defense Information Systems Agency (DISA) - DC
Project: DCPS-0013

B.4 Reviewing Activity:

Army	SC, PT
Air Force	13, 17, 29, 33, 90
DLA	DH
DMA	MP
DIA	DI
DOT	OST
NSA	NS
OASD	IQ, DO, MA, IR
ODISC4 AC	
NAVY	EC, CH, ND, TD, OM

USMC   MC, CG

B.5   Custodians:

DISA:	DC
Army:	SC
Air Force:	90
Navy:	OM
DIA:	DI
NSA:	NS
USMC:	MC
DLA:	DH
Other:	Joint Staff/Architecture & Integration
	USSPACECOM

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-STD 2045-14502-1	2. DOCUMENT DATE *(YYMMDD)* 940729

3. DOCUMENT TITLE Information Technology - Defense Standardized Profiles - Internet Transport Profile for DOD Communications - Part 1: Transport Services

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include Zip Code)*	d. TELEPHONE *(Include Area Code)* (1) Commercial (2) DSN *(If applicable)*	7. DATE SUBMITTED *(YYMMDD)*

8. PREPARING ACTIVITY **DEFENSE INFORMATION SYSTEMS AGENCY (DISA)**

a. NAME Rose D. Satz	b. TELEPHONE *(Include Area Code)* (1) Commercial (2) DSN
c. ADDRESS *(Include Zip Code)* Director JIEO Attn: TBBF Ft. Monmouth, NJ 07703-5613	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041- 3466 Telephone (703) 756-2340 DSN 289-2340

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198-290